AFFIC

A Foundation for Index Comparisons

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Researchers View

7 new indexes per database conference, but NO impact on database systems.

Why? Most new indexes are Δ work or special purpose methods and

A quote from last years DEXA, researches say:

We invent, we do not implement!

They reply to questions like:

• What is the worst/best case complexities for I/O, CPU-Operations?
• What cost models are available?
Vendors View

But Database Vendors ask:

• Will it increase my profit?
• What applications are there?
• What license do I require?
• How costly/complex is
  – the implementation?
  – the integration?
• What performance-boost do I gain?
  – for typical applications
  – compared to buying new hardware
Implementing & Measuring Indexes

Answering the last two question requires:

a common foundation for integration

allowing

• to compare indexes from all aspects:
  – queries,
  – maintenance,
  – optimizer integration,
  – locking
  – …

• to measure not only with artificial data, but
  – real world data
  – standardized benchmarks
AFFIC

Yet another library: **C++, simple, compact**, … allows for implementing just the index as it provides:

- **primitives**
  - storage, cache, buffer management
  - tuples, relations, …

- **applications for**
  - loading
  - querying
  - analyzing, inspecting
  - visualization of indexes

Allows for easier and more exact comparisons of implementation and performance of indexes.
(a) B-Tree  
(b) UB-Tree  
(c) R*-Tree  
(d) BUB-Tree  
(e) Hilbert